education

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Education
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATES (VOCATIONAL)

ASSESSMENT GUIDELINES

ENGINEERING FUNDAMENTALS

NQF LEVEL 2

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CONTENTS

SECTION A: PURPOSE OF THE SUBJECT ASSESSMENT GUIDELINES

This document provides the lecturer with guidelines to develop and implement a coherent, integrated assessment system for Engineering Fundamentals, Engineering Practice and Maintenance and Engineering Processes in the National Certificates (Vocational). It must be read with the *National Policy Regarding Further Education and Training Programmes: Approval of the Documents, Policy for the National Certificates (Vocational) Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF)*. This assessment guideline will be used for National Qualifications Framework Levels 2-4.

This document explains the requirements for the internal and external subject assessment. The lecturer must use this document with the *Subject Guidelines: Engineering Fundamentals* to prepare for and deliver Engineering Fundamentals. Lecturers should use a variety of resources and apply a range of assessment skills in the setting, marking and recording of assessment tasks.

SECTION B: ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

1   ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

Assessment in the National Certificates (Vocational) is underpinned by the objectives of the National Qualifications Framework (NQF). These objectives are to:

- Create an integrated national framework for learning achievements.
- Facilitate access to and progression within education, training and career paths.
- Enhance the quality of education and training.
- Redress unfair discrimination and past imbalances and thereby accelerate employment opportunities.
- Contribute to the holistic development of the student by addressing:
  - social adjustment and responsibility;
  - moral accountability and ethical work orientation;
  - economic participation; and
  - nation-building.

The principles that drive these objectives are:

- ***Integration***

To adopt a unified approach to education and training that will strengthen the human resources development capacity of the nation.

- ***Relevance***

To be dynamic and responsive to national development needs.

- ***Credibility***

To demonstrate national and international value and recognition of qualification and acquired competencies and skills.

- ***Coherence***

To work within a consistent framework of principles and certification.

- ***Flexibility***

To allow for creativity and resourcefulness when achieving Learning Outcomes, to cater for different learning styles and use a range of assessment methods, instruments and techniques.

- ***Participation***

To enable stakeholders to participate in setting standards and co-ordinating the achievement of the qualification.

- ***Access***

To address barriers to learning at each level to facilitate students' progress.

- *Progression*

To ensure that the qualification framework permits individuals to move through the levels of the national qualification via different, appropriate combinations of the components of the delivery system.

- *Portability*

To enable students to transfer credits of qualifications from one learning institution and/or employer to another institution or employer.

- *Articulation*

To allow for vertical and horizontal mobility in the education system when accredited pre-requisites have been successfully completed.

- *Recognition of Prior Learning*

To grant credits for a unit of learning following an assessment or if a student possesses the capabilities specified in the outcomes statement.

- *Validity of assessments*

To ensure assessment covers a broad range of knowledge, skills, values and attitudes (SKVAs) needed to demonstrate applied competency. This is achieved through:

- clearly stating the outcome to be assessed;
- selecting the appropriate or suitable evidence;
- matching the evidence with a compatible or appropriate method of assessment; and
- selecting and constructing an instrument(s) of assessment.

- *Reliability*

To assure assessment practices are consistent so that the same result or judgment is arrived at if the assessment is replicated in the same context. This demands consistency in the interpretation of evidence; therefore, careful monitoring of assessment is vital.

- *Fairness and transparency*

To verify that no assessment process or method(s) hinders or unfairly advantages any student. The following could constitute unfairness in assessment:

- Inequality of opportunities, resources or teaching and learning approaches
- Bias based on ethnicity, race, gender, age, disability or social class
- Lack of clarity regarding Learning Outcome being assessed
- Comparison of students' work with other students, based on learning styles and language

- *Practicability and cost-effectiveness*

To integrate assessment practices within an outcomes-based education and training system and strive for cost and time-effective assessment.

2 ASSESSMENT FRAMEWORK FOR VOCATIONAL QUALIFICATIONS

The assessment structure for the National Certificates (Vocational) qualification is as follows:

2.1 Internal continuous assessment (ICASS)

Knowledge, skills values, and attitudes (SKVAs) are assessed throughout the year using assessment instruments such as projects, tests, assignments, investigations, role-play and case studies. The internal continuous assessment (ICASS) practical component is undertaken in a real workplace, a workshop or a "Structured Environment". This component is moderated internally and externally quality assured by Umalusi. All internal continuous assessment (ICASS) evidence is kept in a Portfolio of Evidence (PoE) and must be readily available for monitoring, moderation and verification purposes.

2.2 External summative assessment (ESASS)

The external summative assessment is either a single or a set of written papers set to the requirements of the Subject Learning Outcomes. The Department of Education administers the theoretical component according to relevant assessment policies.

A compulsory component of external summative assessment (ESASS) is the **integrated summative assessment task (ISAT).** This assessment task draws on the students' cumulative learning throughout the year. The task requires **integrated application of competence** and is executed under strict assessment conditions. The task should take place in a simulated or "Structured Environment". The integrated summative assessment task (ISAT) is the most significant test of students' ability to apply their acquired knowledge.

The integrated assessment approach allows students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

External summative assessments will be conducted annually between October and December, with provision made for supplementary sittings.

3   MODERATION OF ASSESSMENT

3.1   Internal moderation
Assessment must be moderated according to the internal moderation policy of the Further Education and Training (FET) college. Internal college moderation is a continuous process. The moderator's involvement starts with the planning of assessment methods and instruments and follows with continuous collaboration with and support to the assessors. Internal moderation creates common understanding of Assessment Standards and maintains these across vocational programmes.

3.2   External moderation
External moderation is conducted by the Department of Education, Umalusi and, where relevant, an Education and Training Quality Assurance (ETQA) body according to South African Qualifications Authority (SAQA) and Umalusi standards and requirements.

The external moderator:

- monitors and evaluates the standard of all summative assessments;
- maintains standards by exercising appropriate influence and control over assessors;
- ensures proper procedures are followed;
- ensures summative integrated assessments are correctly administered;
- observes a minimum sample of ten (10) to twenty-five (25) percent of summative assessments;
- gives written feedback to the relevant quality assuror; and
- moderates in case of a dispute between an assessor and a student.

Policy on inclusive education requires that assessment procedures for students who experience barriers to learning be customised and supported to enable these students to achieve their maximum potential.

4   PERIOD OF VALIDITY OF INTERNAL CONTINUOUS ASSESSMENT (ICASS)

The period of validity of the internal continuous assessment mark is determined by the *National Policy on the Conduct, Administration and Management of the Assessment of the National Certificates (Vocational).*

The internal continuous assessment (ICASS) must be re-submitted with each examination enrolment for which it constitutes a component.

5   ASSESSOR REQUIREMENTS

Assessors must be subject specialists and should ideally be declared competent against the standards set by the ETDP SETA. If the lecturer conducting the assessments has not been declared a competent assessor, an assessor who has been declared competent may be appointed to oversee the assessment process to ensure the quality and integrity of assessments.

6   TYPES OF ASSESSMENT

Assessment benefits the student and the lecturer. It informs students about their progress and helps lecturers make informed decisions at different stages of the learning process. Depending on the intended purpose, different types of assessment can be used.

6.1 Baseline assessment

At the beginning of a level or learning experience, baseline assessment establishes the knowledge, skills, values and attitudes (SKVAs) that students bring to the classroom. This knowledge assists lecturers to plan learning programmes and learning activities.

6.2 Diagnostic assessment

This assessment diagnoses the nature and causes of learning barriers experienced by specific students. It is followed by guidance, appropriate support and intervention strategies. This type of assessment is useful to make referrals for students requiring specialist help.

6.3 Formative assessment

This assessment monitors and supports teaching and learning. It determines student strengths and weaknesses and provides feedback on progress. It determines if a student is ready for summative assessment.

6.4 Summative assessment

This type of assessment gives an overall picture of student progress at a given time. It determines whether the student is sufficiently competent to progress to the next level.

7 PLANNING ASSESSMENT

An assessment plan should cover three main processes:

7.1 Collecting evidence

The assessment plan indicates which Subject Outcomes and Assessment Standards will be assessed, what assessment method or activity will be used and when this assessment will be conducted.

7.2 Recording

Recording refers to the assessment instruments or tools with which the assessment will be captured or recorded. Therefore, appropriate assessment instruments must be developed or adapted.

7.3 Reporting

All the evidence is put together in a report to deliver a decision for the subject.

8 METHODS OF ASSESSMENT

Methods of assessment refer to who carries out the assessment and includes lecturer assessment, self-assessment, peer assessment and group assessment.

LECTURER ASSESSMENT	The lecturer assesses students' performance against given criteria in different contexts, such as individual work, group work, etc.
SELF-ASSESSMENT	Students assess their own performance against given criteria in different contexts, such as individual work, group work, etc.
PEER ASSESSMENT	Students assess another student or group of students' performance against given criteria in different contexts, such as individual work, group work, etc.
GROUP ASSESSMENT	Students assess the individual performance of other students within a group or the overall performance of a group of students against given criteria.

9 INSTRUMENTS AND TOOLS FOR COLLECTING EVIDENCE

All evidence collected for assessment purposes is kept or recorded in the student's Portfolio of Evidence (PoE).

The following table summarises a variety of methods and instruments for collecting evidence. A method and instrument is chosen to give students ample opportunity to demonstrate the Subject Outcome has been attained. This will only be possible if the chosen methods and instruments are appropriate for the target group and the Specific Outcome being assessed.

	METHODS FOR COLLECTING EVIDENCE		
	Observation-based (Less structured)	**Task-based** (Structured)	**Test-based** (More structured)
Assessment instruments	• Observation • Class questions • Lecturer, student, parent discussions	• Assignments or tasks • Projects • Investigations or research • Case studies • Practical exercises • Demonstrations • Role-play • Interviews	• Examinations • Class tests • Practical examinations • Oral tests • Open-book tests
Assessment tools	• Observation sheets • Lecturer's notes • Comments	• Checklists • Rating scales • Rubrics	• Marks (e.g. %) • Rating scales (1-7)
Evidence	• Focus on individual students • Subjective evidence based on lecturer observations and impressions	**Open middle**: Students produce the same evidence but in different ways. **Open end**: Students use same process to achieve different results.	Students answer the same questions in the same way, within the same time.

10 TOOLS FOR ASSESSING STUDENT PERFORMANCE

Rating scales are marking systems where a symbol (such as 1 to 7) or a mark (such as 5/10 or 50%) is defined in detail. The detail is as important as the coded score. Traditional marking, assessment and evaluation mostly used rating scales without details such as what was right or wrong, weak or strong, etc.

Task lists and **checklists** show the student what needs to be done. They consist of short statements describing the expected performance in a particular task. The statements on the checklist can be ticked off when the student has adequately achieved the criterion. Checklists and task lists are useful in peer or group assessment activities.

Rubrics are a hierarchy (graded levels) of criteria with benchmarks that describe the minimum level of acceptable performance or achievement for each criterion. It is a different way of assessment and cannot be compared to tests. Each criterion described in the rubric must be assessed separately. Mainly, two types of rubrics, namely holistic and analytical, are used.

11 SELECTING AND/OR DESIGNING RECORDING AND REPORTING SYSTEMS

The selection or design of recording and reporting systems depends on the purpose of recording and reporting student achievement. **Why** particular information is recorded and **how** it is recorded determine which instrument will be used.

Computer-based systems, for example spreadsheets, are cost and time effective. The recording system should be user-friendly and information should be easily accessed and retrieved.

12 COMPETENCE DESCRIPTIONS

All assessment should award marks to evaluate specific assessment tasks. However, marks should be awarded against rubrics and not simply be a total of ticks for right answers. Rubrics should explain the competence level descriptors for the skills, knowledge, values and attitudes (SKVAs) a student must demonstrate to achieve each level of the rating scale.

When lecturers or assessors prepare an assessment task or question, they must ensure that the task or question addresses an aspect of a Subject Outcome. The relevant Assessment Standard must be used to create the rubric to assess the task or question. The descriptions must clearly indicate the minimum level of attainment for each category on the rating scale.

13 STRATEGIES FOR COLLECTING EVIDENCE

A number of different assessment instruments may be used to collect and record evidence. Examples of instruments that can be (adapted and) used in the classroom include:

13.1 Record sheets

The lecturer observes students working in a group. These observations are recorded in a summary table at the end of each project. The lecturer can design a record sheet to observe students' interactive and problem-solving skills, attitudes towards group work and involvement in a group activity.

13.2 Checklists

Checklists should have clear categories to ensure that the objectives are effectively met. The categories should describe how the activities are evaluated and against what criteria they are evaluated. Space for comments is essential.

SECTION C: ASSESSMENT IN ENGINEERING FUNDAMENTALS

1 SCHEDULE OF ASSESSMENT

At NQF levels 2, 3 and 4, lecturers will conduct assessments as well as develop a schedule of formal assessments that will be undertaken in the year. All three levels also have an external examination that accounts for 50 percent of the total mark. The marks allocated to assessment tasks completed during the year, kept or recorded in a Portfolio of Evidence (PoE) account for the other 50 percent.

The Portfolio of Evidence (PoE) and the external assessment include practical and written components. The practical assessment in Engineering Fundamentals must, where necessary, be subjected to external moderation by Umalusi or an appropriate Education and Training Quality Assurance (ETQA) body, appointed by the Umalusi Council in terms of Section 28(2) of the *General and Further Education and Training Quality Assurance Act, 2001 (Act No. 58 of 2001).*

2 RECORDING AND REPORTING

Engineering Fundamentals, Engineering Practice and Maintenance and Engineering Processes, as is the case for all the other Vocational subjects, is assessed according to five levels of competence. The level descriptions are explained in the following table.

Scale of Achievement for the Vocational component

RATING CODE	RATING	MARKS %
5	Outstanding	80-100
4	Highly competent	70-79
3	Competent	50-69
2	Not yet competent	40-49
1	Not achieved	0-39

The programme of assessment should be recorded in the Lecturer's Portfolio of Assessment for each subject. The following should at least be included in the Lecturer's Assessment Portfolio:

- A contents page
- The formal schedule of assessment
- The requirements for each assessment task
- The tools used for each assessment task
- Recording instrument(s) for each assessment task
- A mark sheet and report for each assessment task

The college must standardise these documents.

The student's Portfolio of Evidence (PoE) must at least include:

- A contents page
- The assessment tasks according to the assessment schedule

- The assessment tools or instruments for the task
- A record of the marks (and comments) achieved for each task

Where tasks cannot be contained as evidence in the Portfolio of Evidence (PoE), its exact location must be recorded and it must be readily available for moderation purposes.

The following units guide internal assessment in Engineering Fundamentals Level 2:

NUMBER OF UNITS	ASSESSMENT	COVERAGE
2	Formal written tests	One or more completed topics
1	Internal written exams	All completed topics
5	Practical assessments	Must cover the related Subject Outcomes: • For example, assignments and projects on safety, case studies on health and environmental factors, first aid practices and fire-fighting exercises

ASSESSMENT OF ENGINEERING FUNDAMENTALS

LEVEL 2

3 INTERNAL ASSESSMENT OF SUBJECT OUTCOMES IN ENGINEERING FUNDAMENTALS – LEVEL 2

Topic 1: South African Manufacturing, Engineering and Technology

SUBJECT OUTCOME	
Identify and describe the work environments in the manufacturing, engineering and technology fields.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
- Occupational areas in manufacturing, engineering and technology fields are identified. - Work ethics in manufacturing, engineering and technology fields is identified and the benefits of complying with work ethics are discussed. - Important facts about quality of work life are explained. - Ways of promoting quality of work life are explained. - A code of conduct in an engineering workplace is discussed.	- Identify the occupational areas in the manufacturing, engineering and technology fields. - Identify work ethics in manufacturing, engineering and technology fields. - Explain quality of work life. - Discuss a code of conduct in an engineering workplace.
ASSESSMENT TASKS OR ACTIVITIES	
- Students identify occupational areas in this sector. - Students identify good and bad work habits and record them. - Students explain what quality of work life is and how it can be improved in the workplace. - Students explain a code of conduct and disciplinary procedures in the workplace.	

SUBJECT OUTCOME	
Discuss legislation affecting the world of work in the manufacturing, engineering and technology fields.	
Range: The Bill of Rights, Employment Equity Act and Labour Relations Act	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
- Different acts that govern the world of work in South Africa are identified. - The purpose of each piece of legislation is explained using the acts or legislation documents. - The impact of various legislations in the world of work is discussed.	- Identify different actsthat govern the world of work in South Africa. - Explain the purpose of the legislation that affect the world of work in South Africa. - Discuss the impact of this legislations on the world of work in South Africa.
ASSESSMENT TASKS OR ACTIVITIES	
- Students identify legislation or acts that impact on workplaces - Students explain the objectives of each of this legislation. - Students discuss the impact of various acts at work.	

Topic 2: Safety Practices in the Engineering Workplace

SUBJECT OUTCOME	
Comply with housekeeping practices.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
- Machines and tools are cleaned and maintained. - Working environments are cleaned. - Cleanliness and orderliness in the workplace are monitored and controlled. - Suitable storage places for goods that need to be stacked are allocated. - Storage and stacking equipment are maintained. - Housekeeping is applied to demarcated areas. - The purpose of demarcated areas, emergency stops, exits and first aid stations are identified and	- Clean and maintain machines and tools. - Clean working environments. - Monitor and control orderliness and cleanliness in the workplace. - Allocate suitable storage places for goods that need to be stacked. - Maintain storage and stacking equipment. - Apply housekeeping to demarcated areas. - Identify and explain the purpose of demarcated areas,

explained.	emergency stops, exits and first aid stations.

ASSESSMENT TASKS OR ACTIVITIES
• Students identify different equipment and machinery, check if they are safe for use and explain the implications of using unsafe machines and equipment. • Students explain how they can remedy unsafe conditions and demonstrate the procedure of reporting problems to their supervisor. • Students explain the purpose of demarcated areas, emergency stops, exits and first aid stations.

SUBJECT OUTCOME	
Use and explain the purpose of safety and protective equipment	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The purpose of safety equipment and safety procedures are discussed. • The purpose of personal protective equipment is discussed. • Personal protective equipment is used. • Safety equipment is used correctly.	• Discuss the purpose of safety equipment and safety procedures. • Discuss the purpose of personal protective equipment. • Use personal protective equipment. • Use safety equipment correctly.
ASSESSMENT TASKS OR ACTIVITIES	
• Students read and interpret safety acts. • Students demonstrate the correct use of protective equipment and give reasons why protective equipment should be used and when and where it should be used.	

SUBJECT OUTCOME	
Keep the workplace safe and productive.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Tools and equipment are checked for safety. • Machines and tools are used safely. • Workplace and site are checked for safety. • Unsafe or potentially unsafe conditions that may occur while working are identified and responded to. • Emergency conditions are identified. • Chemicals, solvents, gases and explosives are identified, used and stored.	• Check tools and equipment for safety. • Use machines and tools safely. • Check workplace and site for safety. • Identify and respond to unsafe or potentially unsafe conditions that may occur while working. • Identify emergency conditions. • Identify, use and store chemicals, solvents, gases and explosives.
ASSESSMENT TASKS OR ACTIVITIES	
• Students explain the purpose of safety procedures and demonstrate the safe use of safety equipment. These equipments must be available to students. • Students show the demarcation lines in the worksite and explain their purpose and the purpose of emergency stops, exits and first aid stations. • Students identify unsafe acts and conditions in the workplace and explain how they can take corrective and preventative actions in the event of an accident or injury.	

Topic 3: Basic Fire-fighting

SUBJECT OUTCOME	
Describe different types of fire and demonstrate how to combat each type in the workplace.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The types of fire and their contexts are identified. • Appropriate fire-fighting procedures are selected and applied. • Appropriate fire-fighting equipment is identified, selected and used.	• Identify the types of fire and their contexts. • Select and apply appropriate fire-fighting procedures. • Identify, select and use appropriate fire-fighting equipment.
ASSESSMENT TASKS OR ACTIVITIES	
• Students explain the components of fire and their influence on the fire, the types of fire and how each fire must be extinguished.	

• Students explain the different causes of fire in the workplace and how the severity of the damage affects the workplace.
• Students identify different fire-fighting equipment, explain why each piece is chosen and demonstrate how each is used.

Topic 4: Basic First Aid

SUBJECT OUTCOME	
Understand and administer first aid	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Basic first aid concepts are identified and discussed. • The nature of the injury or medical emergency is determined and the basic first aid necessary is identified. • Basic first aid procedure is applied.	• Identify and discuss basic first aid concepts. • Determine the nature of the injury or medical emergency and identify the basic first aid necessary. • Apply basic first aid procedure.
ASSESSMENT TASKS OR ACTIVITIES	
• Students explain the importance of performing first aid and discuss legislation that relates to first aid. • Students list and discuss the types of injury that commonly occur in an engineering workplace. • Students identify the different items in the first aid kit and explain and demonstrate how each is used. • Students explain and demonstrate how a patient must be stabilised. • Students explain how to give medical personnel the history and nature of the injury. • Students compile a first aid report.	

Topic 5: Health and the Environment

SUBJECT OUTCOME	
Explain the purpose of the Occupational Health and Safety Act and the Mine Health and Safety Act.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The legal terminology used in the acts is defined. • The purpose of making a working environment safe and healthy as regulated by legislation is explained. • The role of the employer and employee in terms of their rights, roles, liabilities and responsibilities regarding safety is described.	• Define the legal terminology used in the acts. • Explain the purpose of making a working environment safe and healthy as regulated by legislation. • Describe the role of the employer and employee in terms of their rights, roles, liabilities and responsibilities regarding safety.
ASSESSMENT TASKS OR ACTIVITIES	
• Students discuss and explain the relevant legislation.	

SUBJECT OUTCOME	
Perform the role of a safety, health and environmental protection representative.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The role and responsibilities to show the importance of such a position in relation to engineering environments are explained and discussed. • Safety, heath and environmental protection issues in the workplace are investigated and inspected on a regular basis and a report is compiled. • Corrective measures are taken where necessary and are monitored. • Employees are consulted about safety, health and environmental protection issues in the workplace. • Employees are represented in safety health and environmental protection and processes. • Coaching of employees on safety, health and environmental protection issues is explained.	• Explain and discuss the role and responsibilities of a safety, heath and environmental protection representative. • Investigate and inspect safety, heath and environmental protection issues in the workplace. • Consult employees about safety, health and environmental protection issues in the workplace. • Represent employees in safety, health and environmental protection structures and processes. • Coach employees on safety, health and environmental protection issues.
ASSESSMENT TASKS OR ACTIVITIES	
• Students find out the responsibilities of a health and safety representative at the workplace.	

- Students conduct investigations about health and environmental protection issues in the workplace and recommend corrective actions.
- Students explain how employees are consulted about safety, health and environmental protection issues in the workplace.
- Students explain how employees are represented in safety health and environmental protection and processes.
- Students explain how employees are coached on safety, health and environmental protection issues to improve health and safety.

SUBJECT OUTCOME	
Describe the influence pollution has on the environment	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
- Pollution is defined. - Different types of pollution are identified and described. - Ways of lowering or eradicating pollution are identified.	- Define pollution. - Identify and describe different types of pollution. - Identify ways of lowering or eradicating pollution.
ASSESSMENT TASKS OR ACTIVITIES	
Students define pollution and put forward way to combat pollution.	

4   SPECIFICATIONS FOR EXTERNAL ASSESSMENT IN ENGINEERING FUNDAMENTALS – LEVEL 2

4.1   Integrated summative assessment task (ISAT)

A compulsory component of the external assessment (ESASS) is the **integrated summative assessment task (ISAT)**. The integrated summative assessment task (ISAT) draws on the students' cumulative learning achieved throughout the year. The task requires **integrated application of competence** and is executed and recorded in compliance with assessment conditions.

Two approaches to the integrated summative assessment task (ISAT) may be as follows:

The students are assigned a task at the beginning of the year which they will have to complete in phases throughout the year to obtain an assessment mark. A final assessment is made at the end of the year when the task is completed.

OR

Students achieve the competencies throughout the year but the competencies are assessed cumulatively in a single assessment or examination session at the end of the year.

The integrated summative assessment task (ISAT) is set by an externally appointed examiner and is conveyed to colleges in the first quarter of the year.

The integrated assessment approach enables students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

4.2   National Examination

A National Examination is conducted annually in October or November by means of a paper(s) set and moderated externally. The following distribution of cognitive application should be followed:

	KNOWLEDGE AND COMPREHENSION	APPLICATION	ANALYSIS, SYNTHESIS AND EVALUATION
LEVEL 2	50%	40%	10%

MARK ALLOCATION PER QUESTION		
All questions are compulsory.		
Question 1:	South African Manufacturing, Engineering and Technology	40 marks
Question 2:	Safety Practices in the Engineering Workplace	30 marks

Question 3:	Basic Fire-fighting	10 marks
Question 4:	Basic First Aid	7 marks
Question 5:	Health and the Environment	13 marks
	TOTAL	**100 marks**